

DOCUMENT RESUME

ED 112 127

CE 004 913

AUTHOR Mountain, Norma M.
TITLE Model Career Resource Centers in Schools for the Systematic Purposeful Use of Career Information Supported by a State Information Preparation Agency. Final Report.
INSTITUTION North Hills School District, Pittsburgh, Pa.
SPONS AGENCY Pennsylvania State Dept. of Education, Harrisburg. Bureau of Vocational, Technical, and Continuing Education.
PUB DATE 30 Jun 73
NOTE 24p.; Appendix D has been deleted because it is not reproducible in microfiche
EDRS PRICE MF-\$0.70 HC-\$1.58 Plus Postage
DESCRIPTORS *Career Education; Career Planning; *Educational Resources; *Information Systems; Models; *Resource Centers; Secondary Education; *Vocational Development
IDENTIFIERS *Career Information Centers; Pennsylvania (North Hills)

ABSTRACT

The system for delivering career development information to the school personnel and 3,500 students in grades 9-12 in the North Hills schools outside Pittsburgh is described. Objectives of the career resource center were to make available career information, assist in its utilization, and provide professional help to students in their career planning. An internal evaluation of the center is reported in which the regular guidance program and the resource center program are compared using a student survey and detailed records of resource center use. A listing of career resource center equipment and materials, North Hills High School's career development objectives, and its related course offerings are appended. (MU)

* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *

FD112127

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRO-
DUCED EXACTLY AS RECEIVED FROM
THE PERSON OR ORGANIZATION ORIGIN-
ATING IT. POINTS OF VIEW OR OPINIONS
STATED DO NOT NECESSARILY REPRESENT
OFFICIAL NATIONAL INSTITUTE OF
EDUCATION POSITION OR POLICY

SEP 10 1975

FINAL REPORT

**MODEL CAREER RESOURCE CENTERS IN SCHOOLS FOR THE SYSTEMATIC
PURPOSEFUL USE OF CAREER INFORMATION SUPPORTED BY A STATE
INFORMATION PREPARATION AGENCY
Project No. 20-2002**

By

**Norma M. Mountan
Career Resource Specialist**

**North Hills School District
4900 Perry Highway
Pittsburgh, PA 15229**

June 30, 1973

**Pennsylvania Department of Education
Bureau of Vocational, Technical and Continuing Education**

CE 004913-

ABSTRACT

The problem that existed was three-fold in nature: the apparent deficiencies which exist in available career information resources; inadequate methods of dissemination and utilization of such resources when they are available; and the lack of a trained vocational counselor to assist students in the appropriate use of this information by the students and the school in relationship to vocational development.

The Career Resource Center was important in vocational education because it provided career information that was easily accessible and a trained person to aid the student in its utilization. In the past, these three areas had been fragmented and uncoordinated leading to confusion and indecision on the part of young people. It was the aim of this center to coordinate these three areas so that direction was given in the process of vocational choice.

The objectives of the North Hills Career Resource Center designed to alleviate this problem were as follows: (1) to collect, evaluate and disseminate accurate and relevant career information; (2) to provide assistance to the center's clientele in locating, evaluating and using career information; (3) to help students integrate self-knowledge with relevant career information by providing counseling services; (4) to assist the faculty in integrating information into their instructional activities to support the student's career development; (5) to assist parents in becoming active, concerned and understanding participants in the career development of their children; and (6) to utilize community resources in fostering a better understanding of the relationship of education to work.

The project served a school population in a white, suburban, middle-class community seven miles north of Pittsburgh, PA. The 3500 students in grades nine through twelve came from homes where 58.3% were "white collar" workers

and 35.9%, blue-collar workers.

Evaluation of the project was done by using a 2 x 2 design based on Pre-Post Control Group design (No. 4), Gage, 1963. In Addition a descriptive analysis was made for each objective.

METHODS

a. General Design

Each CRC used a 2 x 2 design based on Pre-Post Control Group design (No. 4), Gage, 1963. In addition, a descriptive analysis was made for each objective.

	<u>Pre</u>	<u>Post</u>
Experimental	CRC	CRC
Control	Regular Guidance Program	Regular Guidance Program

b. Sample

All teachers at the experimental and control sites (N = 1,000) were tested. In addition, a random sample of 120 grade 9 boys and girls and 130 grade 10 boys and girls were tested.

c. Instruments

Data and instrumentation which was used:

Pennsylvania Occupational Questionnaire (Pennsylvania Department of Education, 1971) was used as a pre- and post measure of pupil knowledge of the world of work. This instrument was designed to measure pupil knowledge of job activities, requirements and working conditions. The summary phase of field testing, involving 275 grade 7 pupils, revealed a Kuder-Richardson -- 20 of .328 and a test mean of 19.02 with a standard deviation of 6.27.

Crites Vocational Development Inventory Form IV (Crites, 1969) was used as a pre- and post measure of pupil attitudes toward the world of work.

This instrument was designed to measure the degree of consistency of vocational choice, wisdom of vocational choice, competencies and vocational choice attitudes. The Kuder-Richardson - 20 estimated range from .60 to .79 for different grades. The test-retest reliability was estimated at .71, with a standard error of measurement of 3.12. At present, norming scales range from grade 7 to adulthood.

Think About the Career Resource Center (Tuckman, 1972), a semantic differential pre-post measure, was administered to teachers and students in the control schools. This instrument was designed to measure the attitudes of teachers and students toward the guidance program. Reliability and validity has not been established for this instrument.

Career Resource Center Evaluation Form (CRC Director, 1972), a student questionnaire, was administered to the experimental group to determine student opinion concerning the efficiency and effectiveness of the CRCs. Career Resource Center Equipment and Material Form, a rating scale, was administered to the CRC Directors to determine the educational value of equipment and materials located in the centers.

d. Statistical Analysis

Analysis of variance will be employed to analyze the pre-post data for POQ, VDI, Think About the CRC for students and teachers and Think About the Guidance Program for students and teachers. Analysis of covariance will also be used if justified to correct for pretest differences between the experimental and control groups. The .05 level of confidence will be used.

Descriptive statistics will be used to analyze the CRC Equipment and Material Form and CRC Evaluation Form.

FINDINGS AND ANALYSIS

- Objective 1. To collect, evaluate and disseminate accurate and relevant career information.
- a. Equipment and Materials Evaluation, Appendix A
 - b. Getting It Together, Appendix B.
- Objective 2. To provide assistance to the Center's Clientele in locating, evaluating, and using career information.
- a. Career Center Personnel included Norma M. Mountan, Career Resource Specialist, M. Ed, in Counseling in Education, the Pennsylvania State University; and Susan G. Segall, Vocational Counselor, M. Ed. in Counseling in Education, University of Pittsburgh.
 - b. An average of 350 students per month visited the CRC. This record was kept through the CRC Student Information Card. See Appendix C.
 - c. To continue meeting the needs of students, the Career Resource Specialist designed a questionnaire to survey the student population annually. See Appendix D.
- Objective 3. To help students integrate self-knowledge with relevant career information by providing counseling services.
- a. The Research Coordinating Unit of the Department of Education will supply the findings and analyses to measure this objective.
- Objective 4. To assist the faculty in integrating information into their instructional activities to support the student's career development.

Objective 4. (Cont.)

- a. Career Development Program - North Hills Intermediate High School. See Appendix E.
- b. North Hills School District Industrial Arts Department. See Appendix F.
- c. Mini-Unit Related to Mathematics, Appendix G.

Objective 5. To assist parents in becoming active, concerned and understanding participants in the career development of their children.

- a. The Career Resource Center was available for student-parent joint planning. However, it was difficult to arrange an on-going program in spite of keeping the Center open one night a week for two years and publicizing this to students and parents.

College selection was the one process in which parents became involved.

Objective 6. To utilize community resources in fostering a better understanding of the relationship of education to work.

- a. The community was utilized in the program of the North Hills Career Resource Center in the following ways:

Career Consultants. People with special talents or specialized knowledge of a particular profession or vocation came into the Center each week to talk with students who share a common interest in a career field.

Classroom Consultants. People served as resources in mini-units in the classroom related to career education. An example of this was a mini-unit on "life style" around careers

Objective 6. (Cont.)

related to mathematics. Resource people assisted in the classroom in the areas of payroll deduction, automobile financing, real estate and insurance, and household budgets. Another example was mock-interview experience.

Career Nights. Community people assisted the Education Council of the North Hills School District every two years in a Career Night for students in Grades 9 - 12. The Career Resource Specialist played an active part in this program.

Observation stations. Local businessmen cooperated in serving as a station for business education students who spent a day in an office, as well as cooperated in a work experience program for 20 senior girls.

Employers. The Career Resource Center assisted students to gain part-time work experience or volunteer experience through contacts with local employers, institutions and agencies.

Community Council. Community members contributed through increased involvement in matters related to the total education of children. Opinions and thoughts about educational concerns provided useful input for administrative decisions.

APPENDIX A

CRC EQUIPMENT AND MATERIALS

Item and Address	Usage*	Cost \$1,215	Rating**	Type of Student***	Comments
1 Reader-Printer 3M Business Products Sales, Inc. 820 Parish St., Pgh., Pa. 15220	NA		NA	All	Equipment cannot be rated as machines were defective and had little use. This is new equipment ordered.
7 Cassette player-recorders J. E. Foss Company, Inc. 3549 Saw Mill Run Blvd., Pittsburgh, Pa. 15227	A	315	3	All	Cassette recorders were used a great deal more at the 7th and 8th grade level.
1 Vellensak Cassette player-recorder J. E. Foss Company, Inc.	NA	176	1	All	Two of these machines have been purchased both were stolen. Planned usage was a listening center.
2 Standard Filmstrip Projectors J. E. Foss Company, Inc.	A	106	4	All	Used by individual students but recommended classroom use as valuable to more students.
2 Record Players - J. E. Foss Co., Inc.	A	143	4	All	Same as above.
2 Viewlex Previewers - J. E. Foss Co.	A	32	4	All	Necessary equipment for individual students.
1 Kodak Ektographic Carousel Projector J. E. Foss Company, Inc.	L	165	4	All	Used by career specialist or consultants only.
8 Headsets J. E. Foss Company, Inc.	NA	95	NA	All	Vellensak player-recorder to drive headsets has been missing.
2 College View decks Chronicle Guidance Pub., Inc. Moravia, N.Y. 13113	H	320	4	A, V	Recommended for use only with counselor assistance.

* NA - Not Applicable, H - High, A - Average, L - Low

** NA - Not Applicable, 4 - Excellent, 3 - Good, 2 - Fair, 1 - Poor or Missing

*** A - Academic, V - Vocational, G - General, or All - all 3

CRC EQUIPMENT AND MATERIALS (Page 2)

<u>Item and Address</u>	<u>Usage*</u>	<u>Cost</u>	<u>Rating**</u>	<u>Type of Student***</u>	<u>Comments</u>
1 Occupational Viewdeck: Chronicle Guidance Pub., Inc.	A	\$ 05	3	All	Recommended for use only with counselor assistance
3 Photography Slide Series Eastman Kodak Co., Dept. 454 Rochester, N.Y. 14650	L	30	3	V	
1 Occupational Outlook Slide Series U.S. Dept. of Labor Washington, D.C. 20212	L	10	2	A	
34 Guidance Associates Filmstrips Pleasantville, N.Y. 10570	L	1,190	4	All	Grades 7 thru 10 are most interested in audio visual materials.
1 The Secretary in a Changing Business World (Filmstrip) - The New York Times	L	50	4	V	
3 Career Guidance Series Educational Activities, Inc., Box 392, Freeport, L.I., N.Y. 11520	L	150	3	All	
5 Direction for Tomorrow Multi Media Bowmar Records, Inc. 622 Rodler Dr., Glendale, Calif. 91201	A	325	4	All	
5 Career Kits Careers, Inc. P.O. Box 135, Largo, Fla. 33640	A	210	4	All	Good for exposure to jobs at all educational levels in broad fields
2 Widening Occupational Roles Kit Science Research Associates, Inc. 259 E. Erie St., Chicago, Ill. 60611	A	340	3	All	Purchased for Junior High; little use yet.

* NA - Not Applicable, H - High, A - Average, L - Low

** NA - Not Applicable, 4 - Excellent, 3 - Good, 2 - Fair, 1 - Poor or Missing

*** A - Academic, V - Vocational, G - General, or All - all 3

CRC EQUIPMENT AND MATERIALS (Page 3)

<u>Item and Address</u>	<u>Usaget</u>	<u>Cost</u>	<u>Ratingst</u>	<u>Type of Student***</u>	<u>Comments</u>
	A	\$ 350	4		
3 Job Experience Kits Science Research Associates, Inc.				All	Excellent for hands-on experience in 20 occupations. Very expensive
5 Psychology Today Games Harcourt, Brace, Jovanovitch, Inc. 757 Third Ave., New York, N.Y. 10017	H	40	4	All	Used in mini-courses, classrooms, small groups.
4 Career Games Educational Progress Corp. 8533 E. 41st St., Tulsa, Okla. 74145	H	298	3	All	Not recommended for use with slow reader.
1 Career Development Laboratory Educational Progress Corp.	H	210	3	All	
Ball Occupational Orientation Inventory Follett Publishing Co. 1010 W. Washington Blvd. Chicago, Ill. 60607	H	70	4	All	Used in classrooms, individual students, and small groups.
Exploratory, Technical & Academic Interest Surveys Palmer Publications, Inc., Easton, Pa. 18042	A	30	2	All	Minimum coverage of occupations.
30 copies - Career World Curriculum Innovations, Inc. 1611 Chicago, Evanston, Ill. 60201	L	90	4	All	Excellent for integration into curriculum
1 College Bluebook (14th ed.) CUM Information Corp. 509 Third Ave., New York, N.Y. 10022	K	90	4	A, V	Necessary for the college bound school population
3 Handbook of Job Facts Science Research Assoc., Inc. 259 E. Erie St., Chicago, Ill. 60611	A	18	4	All	Good coverage but not updated often enough.

* NA - Not Applicable, H - High, A - Average, L - Low
 ** NA - Not Applicable, 4 - Excellent, 3 - Good, 2 - Fair
 *** A - Academic, V - Vocational, G - General, or All - all 3

CRC EQUIPMENT AND MATERIALS (Page 4)

<u>Item and Address</u>	<u>Usage*</u>	<u>Cost</u>	<u>Reling**</u>	<u>Type of Student***</u>	<u>Comment</u>
5 Occupational Outlook Handbooks U.S. Gov. Printing Office Div. of Public Documents Washington, D.C. 20402	H	\$ 23	4	All	Most up-to-date reference covering occupations.
1 Encyclopedia of Careers J. G. Ferguson Publishing Co. 6 N. Michigan Ave., Chicago, Ill. 60602	H	22	4	All	
6 Career Opportunities J. G. Ferguson Publishing Co.	H	72	4	All	Excellent reference for technical programs including schools throughout the U.S. that offer programs.
1 Set Vocational Guidance Manuals 235 E. 45th St., New York, N.Y. 10017	A	110	2	All	Become outdated too quickly for investment.
4 Comparative Guide to American Colleges Ancorp National Services, Inc. 400 Cabbage St., Carnegie, Pa. 15106	H	24	4	A	
4 Occupational Guidance Units Moon-Gio Enterprises P.O. Box 342, Sewickley, Pa. 15143	H	300	3	All	Broad occupational coverage; easily updated.
3 Lovejoy College Guides Associated Publishers Guidance Publication Center Los Altos, Calif. 94022	H	23	3	A	Easy to use but not necessary with a Bluebook Series
3 Career and Vocational School Guides Associated Publishers	A	20	3	A, V	
3 Cass & Birnbaum Two-Year & Four-Year Specialized Schools - Associated Publishers	H	11	4	A, V	

* NA - Not Applicable, H - High, A - Average, L - Low
 ** NA - Not Applicable, 4 - Excellent, 3 - Good, 2 - Fair
 *** A - Academic, V - Vocational, G - General, or All - all 3

CRC EQUIPMENT AND MATERIALS (Page 5)

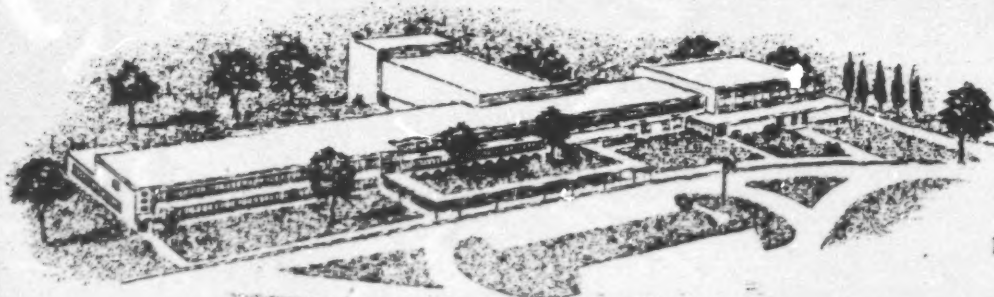
<u>Item and Address</u>	<u>Usage*</u>	<u>Cost</u>	<u>Rating**</u>	<u>Type of Student***</u>	<u>Comments</u>
40 Worlds in the Making	L	\$ 200	4	All	
100 You: Today and Tomorrow Educational Testing Service Princeton, New Jersey	L	150	1	All	To be used in part at the 7th and 8th grade level.
11 Looking Forward to a Career Series Dillon Press, Inc. 106 Washington Ave., N Minneapolis, Minn. 55401	A	44	3	All	
3 The College Handbook College Board Box 592, Princeton, N.J. 08540	H	29	4	A, V	Excellent for capsule description of schools
3 Occupational Files	H	Unknown	4	All	Widely used; inexpensive way to have broad career information
College Catalogs	H	Unknown	3	A, V	

* NA - Not Applicable, H - High, A - Average, L - Low

** IV - Not Applicable, 4 - Excellent, 3 - Good, 2 - Fair, 1 - Poor or Missing

*** A - Academic, V - Vocational, G - General, or All - all

APPENDIX B



*Getting
it
Together*

North Hills High School
January, 1975

Here are the answers to the "Famous Sisters" quiz printed in the December issue of Getting It Together.

1. The first woman to orbit the earth was: Valentina Tereshkova.
2. Diane Arbus was a: Photographer.
3. There has never been a woman: Pope.
4. Each of these women was the power behind a famous ruler. Can you match the woman with the leader whose companion, advisor or mistress she was?
 - a. Castlemaine - Charles II of England; b. Maintenon - Louis XIV; c. Eva Braun - Hitler; d. Sirah Bernhardt - Edward VII; e. Pompadour - Louis XV; f. Walewska - Napoleon I; Missy LeHand - Franklin D. Roosevelt.
5. Match these champion athletes with the sports at which they excel:
 - a. Mary Bacon - Jockey; b. Olga Korbut - Gymnastics; c. Althea Gibson - Track; d. Billie Jean King - Tennis.
6. Identify these contemporary notables: a. Jill Volner - Watergate Attorney; b. Martina Arroyo - Opera Singer; c. Susanne K. Langer - Philosopher; d. Helen Frankenthaler - Painter; e. Naomi Sims - Fashion model; f. Elizabeth Holtzman - Congresswoman; g. Jacqueline DuPre - Cellist; h. Nikki Giovanni - Poet; i. Florence Kennedy - Founder, Feminist Party; j. Dorothy Schiff - Publisher; k. Jane Goodall - Animal behaviorist; l. Marian McPartland - Jazz pianist; m. Mary Wells Lawrence - Advertising exec.; n. Louise Nevelson - Sculptor; o. Mai Britt - Movie Director.
7. Which of these celebrities is involved in the beauty business? Polly Bergen.

CAREER PROGRAMS

January 16 - Veterinary Medicine
Dr. Kenneth Bollens

January 23 - Law
Mr. James Ehrman

January 30 - Commercial Art

January 31 - Military Career Day

February 6 - Psychology
Mr. Bill Cornell
Director of Mellwood House

February 12- Career Film - Auto Mechanic-
Its for You.

Important!

COLLEGE BOARD CALENDAR FOR 1974-75

<u>SAT Tests</u>	<u>Ach. Tests</u>
February 1, 1975	January 11, 1975
April 5, 1975	May 10, 1975
June 28, 1975	

IS THERE A FOREIGN LANGUAGE CAREER IN
YOUR FUTURE?

In plain E N G L I S H, careers using foreign language as a primary skill are essentially limited to teaching, interpreting, and translating.

Translators generally deal with written language while interpreters deal with speech.

Translators and interpreters are employed in federal agencies, the U.N., publishing, broadcasting, and private industry.

U.N.'s Staff of Interpreters - 75
U.N.'s Staff of translators - 200
Two schools providing specialized training: Georgetown University
Monterey Institute of Foreign Studies

Already there are many more applicants than jobs in these fields.

Unless trends reverse, teachers of foreign languages in high schools and colleges will be elbowing each other for jobs.

DON'T BURN YOUR SPANISH or FRENCH BOOKS YET! There are good opportunities for the dedicated language student in a variety of jobs where foreign language skill is a secondary requirement. Knowing more than one language can be the plus factor that causes you to be hired over other applicants who speak only English.

A recent study by the Modern Language Association shows this sampling:

Civil Service: In addition to the State Department, the U. S. Information Agency and the Office of Economic Opportunity, local governments need people with language skills for jobs aiding people from minority groups or immigrants.

ASVAB TESTING

(Armed Services Vocational Aptitude Battery)

11th and 12th grade students will have an opportunity to take this free aptitude test on January 29, 1975, at 9:00 a.m. Students will receive scores on the following aptitudes:

General/Technical - describes the student's ability in relation to clerical and administrative occupations.

Electronics - describes the student's ability in relation to electric and electronic occupations.

General Mechanics - describes ability in terms of those capabilities relevant to a variety of mechanical and trade jobs.

Motor Mechanics - This composite is concerned with ability for engine repair and other related jobs.

What Happens? - Two hours of aptitude testing supervised by qualified military personnel. Tests are scored and results returned to students in a month.

Where? - Room 124 - Senior Building

Why? - An opportunity to take a valid aptitude test to help you in your career decision.

Don't forget

How? - Register in Career Resource Center - limit 150 students (men and women).

This aptitude test is valuable not only to persons who might be interested in a military career, but also to those who might want to get an aptitude measurement in these areas.

Dxar Fxllow Mxmbxrs:

Xvxm though my typxwritxr is an old modxl, it works quitx wxll xxcpt for onx of thx kxys. It is trux that thxrx arx forty-six kxyx that function wxll nxough but just onx kxy not working makxs thx diffxrxncx!

You may say to yourxlf, "Wxll, I am only onx pxrson, I don't makx or brxak a program." But it doxs makx a diffxrxncx, bxcausx your group to bx xffxctivx, nxxds thx activx coopxration of xvxy mxmbxr.

So thx nxxt timx you think you arx only onx pxrson and thax your xfforts arx not nxxdexd, rxmxmbxr my old typxwritxr and say to yourxlf, "I am a kxy pxrson in my group, and my xffortx arx nxxdexd."

Sincxrxly,

COLLEGE REPRESENTATIVES

January 3, 1975

9:30 - Davis & Elkins College

January 7, 1975

2:00 - Salem College

January 10, 1975

11:00 - College of Wooster

January 16, 1975

1:30 - Alfred University

January 17, 1975

10:00 - Mt. Aloysius Jr. College

February 25, 1975

8:30 - Missouri Valley College

MILITARY CAREER DAY

There will be a Military Career Day for 11th and 12th grade students on Friday, January 31, 1975. Students may listen to any recruiters of their choice. The schedule for presentations in the Career Center is as follows:

U. S. Navy - 8:45 a.m. (2nd period)

U. S. Air Force - 9:35 a.m.

(3rd period)

U. S. Marines - 10:25 a.m.

(4th period)

U. S. Army and Reserves - 1:00 p.m.

(6th period)

U. S. Coast Guard - 1:40 p.m.

(7th period)

WHAT TO DO AFTER HIGH SCHOOL (PART II)

In last month's issue the question of furthering one's education by some form of post-high school education was discussed. This month we will take a look at the armed services.

Enlistment Programs - Enlistment procedures for all the branches of the armed forces are similar, with the following exceptions:

Programs offered by the services differ in length of enlistment and also the opportunities for the selection of specific training and assignments.

Each service has its own recruiters to interview the prospective military man or woman initially. Listed below is a brief summary of each branch and also the phone number for that particular service.

Army - (766-0222) enlistment terms are two, three, four, five, or six years. Applicants for specific options are given qualification tests for enlistment.

Navy - (931-1611) enlistment terms are normally for three, four, five or six years.

Air Force - (231-0447) enlistments are four or six year active service terms.

Marine Corps - (931-6665) available for two, three or four years.

Coast Guard - (644-5811) enlistment is for four years active duty.

All branches of the armed services offer a college ROTC program. If you are looking for possible scholarship money, the ROTC scholarship program may be for you.

ZEROING IN

Lithographic Printer

Printing is turning the page. Electronics, photography, lasers, and computers are combining to revolutionize the printing industry. Here's one group of printing occupations expected to grow rapidly. You can learn lithographic skills through apprenticeship.

Lithography (also called offset printing) is one of the most rapidly growing methods of printing. It is a process of photographing the matter to be printed, making a printing plate from the photograph, and pressing the inked plate against a rubber plate which in turn presses it onto the paper. This magazine is printed by the offset method. (For a technical discussion of lithography and other printing methods, consult an encyclopedia.)

Craftspeople in an Up-and-Coming Field

Several operations are involved in lithography, and each is done by a specialized group of workers. The main groups of lithographic workers are:

camera operators (also called cameramen)	Photograph and develop negatives of the basic material before plate making.
lithographic artists	Make corrections by improving images on the negatives, using chemicals, dyes, and tools; paste up material on boards to be photographed.
lithographic strippers	Arrange negatives of type and art on the layout sheets from which press plates are made.
platemakers	Cover the surface of the plates with a coating of photo sensitive chemicals; expose the sensitive plate to the negative; chemically treat plate to bring out photographic image.
lithographic press operators (also called pressmen)	Install plates on presses; adjust water and ink pressure on press rollers for correct operation; tend the offset printing presses.

Getting Camera-ready

About 81,000 skilled lithographic workers are found in commercial printing plants, newspapers, and book and magazine printers. Some 5,100 annual job openings are anticipated throughout the next decade. Most jobs are in big cities, but some are found throughout the country.

A 4-5 year apprenticeship usually is required to become a well-rounded lithographic craftsman. Although apprenticeship programs usually acquaint the apprentice with all phases of lithography, they may emphasize a special craft, such as platemaker



Photos courtesy of the Rochester Institute of Technology

or press operator. You usually must be at least 18 and have a high school diploma, or its equivalent, to become an apprentice.

In high school, take courses in English, photography, mathematics, art and chemistry. Many high schools, vocational schools, technical institutes and community colleges offer courses in printing.

Salaries — Hot off the Press!

Union wage rates in an August, 1974 survey were shown to vary by locale and employer. The minimum hourly rates range from about \$4.00 to \$9.85. Most lithographic workers are members of the Graphic Arts International Union. A number of offset press operators are members of the International Printing Pressmen and Assistants' Union of North America.

Advancement opportunities are good. If you have what it takes to be a manager, you could gradually move to *assistant to foreman/forewoman*, and from there to *general superintendent*, and perhaps to *estimator* and later *production manager* of the printing company. However, college is usually needed for jobs in printing engineering and most types of management.

Career opportunities look excellent in this rapidly expanding field if you keep on top of technological developments.

For more information:

Graphic Arts Technical Foundation
4615 Forbes Ave.
Pittsburgh, Pa. 15213

Send for the 14-page booklet, "Careers in Graphic Communications," and the "School Directory" listing colleges and universities with courses in graphic communication; single copies free.

Public Relations Department
Rochester Institute of Technology
One Lomb Memorial Dr.
Rochester, NY 14608

Send for 28-page booklet, "Careers in Printing"; single copy free.

Film
E.I. DuPont de Nemours and Co.
Advertising Dept., Attn.: Mr. Davis
Wilmington, De. 19898

Send for film, "Graphic Communications: They Used to Call It Printing"; free on loan to schools.

APPENDIX C

C R C STUDENT INFORMATION

NAME _____

GRADE _____

Please CHECK one or more of the following:

☐ I found information on this career.

☐ I would like additional information on this career.

☐ There is no information available.

APPENDIX E

CAREER DEVELOPMENT North Hills Intermediate High School

I. General Objectives:

1. Students will identify their own interests, abilities, values and attitudes.
2. Students will be able to demonstrate a knowledge of their own values, interests, abilities, and attitudes to possible vocational and avocational areas.

II. Performance Objectives:

1. Students will identify their two highest interest areas from a comprehensive interest survey that measures twenty-four interest areas.
2. Students will be able to associate their career interest profile to available subject choices in 10th, 11th, and 12th grade by matching interest area and subjects.
3. Students should be able to write names of at least 10 occupations related to their two highest interest areas.
4. The students will demonstrate a knowledge of the 24 interest areas by listing three occupations related to each area.
5. Students will become aware of the various social and economic aspects of their society by examining salaries, cost of living, job openings, educational requirements, rentals, and the future "World of Work."
6. Students will state the importance of their role in society.
7. Students will practice decision-making ability by playing career games.
8. Students will be able to rank-order personal values.
9. Students will be able to associate personal values to their role in decision-making as it relates to career choice.
10. As a result of participating and observing mock-interviews, students will be able to demonstrate effective interview behavior. (Do same interview twice.)

III. Supporting Activities:

1. Ohio Vocational Interest Survey
 - a. Interpret
 - b. Explain interest areas
 - c. Relate course of study to interest areas
2. Job Interview
 - a. Use of video tape
 - b. Group discussions and critique
 - c. Professional interviewer
 - d. Team teaching
3. Twenty Things I like to Do
 - a. Rank order of first five
 - b. Identify monetary values
 - c. Social values
 - d. Parental influence on values
 - e. Fulfillment of values
 - f. Permanent values
4. Famous Person
 - a. Procedure - Fishbowl (small groups)
 - b. Team teaching
5. Value Exercises
 - a. Values of American society (newspaper)
 - b. Values from student newspaper
 - c. Value sheets
 - d. Open-end sentences
6. Career Game
 - a. Resource Center
 - b. Practicing decision-making
7. Film ("World of Work")
 - a. A.P.G.A.
8. Occupations and Salaries
 - a. Matching
9. Future World of Work
 - a. Expanding occupations
 - b. Declining occupations
 - c. Time area - 1980

APPENDIX F

OCCUPATIONAL AREAS/NORTH HILLS INDUSTRIAL ARTS

As Intermediate and Senior High School students, both male and female, you should be preparing yourself for a career in a field in which you enjoy working. The table on the following pages is presented so that you might better prepare yourself for your chosen occupation. On the right side of this chart is listed many of the different career fields that may be selected. On the left side is a listing of the different industrial arts courses offered at the Intermediate and Senior High Schools. Under the different course offerings are located "X" marks to designate the courses which are recommended for preparation for that occupation or career field. For most effective use of this chart, follow this sequence: (1) read down through the career fields on the left; (2) find a possible career selection; (3) look to the right to see what industrial arts courses will help you prepare for your career selection; (4) enroll for one or more courses as indicated by writing the course title on your schedule sheet.

For additional information on any of these occupational areas, the file number for the Career Resource Center's Occupational Filing Plan is provided. This number is in parenthesis and is located following each occupational area title. If you want to know more about any of these occupations, go to the Career Resource Center and by using the file number indicated request additional information. The Career Resource Center is located in Room 125 in the Senior High School.

OCCUPATIONAL AREAS	NORTH HILLS INDUSTRIAL ARTS COURSES									
	MECHANICAL DRAWING I	MECHANICAL DRAWING II	GRAPHIC ARTS I	GRAPHIC ARTS II	GRAPHIC ARTS DESIGN	ELECTRICITY/ELECTRONICS	POWER TECHNOLOGY	METAL I	METAL II	WOOD I
ADVERTISING (8) MARKETING (567)			X	X	X					
AEROSPACE (13) AIR TRANSPORTATION (31)	X					X	X	X		
ARCHITECTURE (50) LANDSCAPE ARCHITECTURE (51)	X	X								X
TECHNICAL ILLUSTRATION (60) DESIGN AND DRAFTING (285)	X	X						X		
EARTH AND SPACE SCIENCE (869)						X	X	X		
AUTOMOTIVE SERVICES AND SALES (78)			X				X	X	X	
BUILDING MAINTENANCE AND SERVICE (115)	X					X		X		X
CONSTRUCTION INDUSTRY (205 through 215)	X							X		X
MEDICAL OCCUPATIONS (MEDICAL TECHNICIANS INCLUDED)						X				X
ENGINEER AND ENGINEER TECHNICIANS										
ENGINEERING - CIVIL (328)	X	X					X	X		
- MECHANICAL (334)	X	X					X	X		
- GENERAL and INDUSTRIAL (332)	X						X	X		X
- ELECTRICAL and METALLURGICAL (329, 597)	X					X		X		
- TRANSPORTATION (321, 322, 325)	X						X	X		
FORESTRY (394), CONSERVATION (204)							X			X
FURNITURE INDUSTRY (407) WOODWORKING OCCUPATIONS (1082)							X			X
GEOLOGY (419) PETROLEUM INDUSTRY (729)	X					X	X			

OCCUPATIONAL AREAS	NORTH HILLS INDUSTRIAL ARTS COURSES									
	MECHANICAL DRAWING I	MECHANICAL DRAWING II	GRAPHIC ARTS I	GRAPHIC ARTS II	GRAPHIC ARTS DESIGN	ELECTRICITY/ELECTRONICS	POWER TECHNOLOGY	METAL I	METAL II	WOOD I
HOME MECHANICS										
WOOD II										
WOOD I										
METAL II										
METAL I										
POWER TECHNOLOGY										
ELECTRICITY/ELECTRONICS										
GRAPHIC ARTS DESIGN										
GRAPHIC ARTS II										
GRAPHIC ARTS I										
MECHANICAL DRAWING II										
MECHANICAL DRAWING I										
GUNSMITH (436) METALWORKING OCCUPATIONS (599)	X	X						X	X	
HOMEMAKING (454) HOME ECONOMICS (453)	X									X
INSURANCE (487), BANKING (83), LAW (517)	X									X
LIGHT, HEAT AND POWER INDUSTRY (527)	X					X	X			
TELEPHONE & TELEGRAPH INDUSTRY (1004)	X					X	X			
LUMBER & FOREST PRODUCTS INDUSTRY (542)										X
MACHINING OCCUPATIONS (544)	X						X	X	X	X
MILITARY SERVICE (DEPENDING UPON CAREER AREA DESIRED)	X		X			X	X	X		X
NEWSPAPER OCCUPATIONS (771)			X	X	X					
GRAPHIC ARTS OCCUPATIONS (772)			X	X	X					
SAFETY WORK (855)	X		X			X	X	X		X
TEACHING (949 through 984)	X									X
TEACHING OF TECHNICAL SUBJECTS (955, 973, 974, 978)	X		X			X	X	X		X
RADIO & TELEVISION (798 through 802)	X					X	X			X
THEATRICAL OCCUPATIONS (1013)						X		X		X

BEATTIE TECHNICAL SCHOOL/NORTH HILLS INDUSTRIAL ARTS

Ninth and tenth grade boys and girls who anticipate attending the Alfred W. Beattie Technical School during their eleventh and twelfth grades are encouraged to prepare themselves through enrollment in industrial arts courses offered in the Intermediate High School. The following chart may be used to determine the best industrial arts courses for any technical area you may wish to follow. To use this chart effectively follow this sequence: (1) on the left side of the chart read down through the Beattie subject areas; (2) select an area in which you would like to work; (3) look to the right to see what industrial arts courses will help prepare you for your chosen field; (4) enroll for one or more of the courses as indicated by writing the course title on your schedule sheet.

For additional information on the Alfred W. Beattie Northern Areas Technical Program, see your guidance counselor for assistance.

ALFRED W. BEATTIE AREA TECHNICAL SCHOOL VOCATIONAL - TECHNICAL SUBJECTS	NORTH HILLS INDUSTRIAL ARTS COURSES					
	MECHANICAL DRAWING	GRAPHIC ARTS	ELECTRICITY/ ELECTRONICS	POWER TECHNOLOGY	METAL	WOOD
AUTOMOTIVE TECHNOLOGY				X	X	
ENVIRONMENTAL TECHNOLOGY	X		X		X	
MACHINE TOOL TECHNOLOGY	X				X	
FLUID POWER - HYDRAULICS			X	X		
MARKETING		X				X
NUCLEAR - METAL TECHNOLOGY	X				X	
ELECTRONICS			X	X		
OFFSET GRAPHIC ARTS	X	X				
ARCHITECTURAL DRAFTING	X					X
DRAFTING AND DESIGN	X				X	X